

REMARKS

Claims 1-18 have been examined. Claims 4-7 and 13-16 have been withdrawn from Examination. Claims 2, 3, 11, and 12 are canceled without prejudice or disclaimer.

Preliminary Matters

Applicant thanks the Examiner for acknowledging Applicant's election of species 1, claims 1-3, 8-12, and 17-18 in Paper No. 5.

Claim Rejections under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1-3, 8-12, and 17-18 under 35 U.S.C. § 102(b) as allegedly being anticipated by Marx et al. (U. S. Patent No. 5,376,759 hereinafter "Marx").

Applicant submits that Marx does not disclose, or even suggest, a substrate comprising "conductive elements which electronically connect said top main surface and said bottom main surface and cover an entire side of said substrate with said top main surface and said bottom main surface," as recited in Applicant's independent claims 1 and 10. With such conductive elements, it is possible to shield electromagnetic emission from an entire side of a substrate.

In contrast, Marx discloses a multiple layer printed circuit board 60. The multiple layer printed circuit board 60 has top and bottom outermost layers 20 and 22, which are connected to electrical ground potential, and a conductive edge shielding layer 43 formed on an edge region 52. The conductive edge shielding layer 43 is electrically connected to the top and bottom outermost layers 20, 22. However, Marx clearly concedes that the conductive edge shielding layer 43 does not cover an entire edge surface 50 (See col. 7, lines 57-63; col. 7, line 67 to col. 8, line 2). In particular, there is a plurality of edge regions 52, which are devoid of conducting

Amendment under 37 C.F.R. § 1.111
USSN 09/685,771

material, on the edge surface 50 (See col. 7, lines 60-63) for reasons relating to a process or method of manufacturing the multiple layer printed circuit boards 60. Marx also concedes that the edge regions 52 may deteriorate the shield of the electromagnetic emission. To overcome this deficiency, shielding holes 46 are formed immediately inward of the edge regions 52 (See col. 8, lines 3-8). Thus, Marx merely discloses the conductive edge shielding layer 43 fragmentarily covering the edge surface 50 with additional shielding holes 46. Therefore, Marx neither discloses, or even suggests, the conductive elements of the present invention, as recited in Applicant's independent claims 1 and 10.

Thus, Applicant submits that Marx does not disclose, or even suggest, all of the recitations of Applicant's independent claims 1 and 10, and the rejection of these claims should be withdrawn. In addition, claims 8-9 and 17-18 are also patentable at least by virtue of their dependency on independent claims 1 and 10, respectively, and the rejection of these claims should also be withdrawn.

Conclusion


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
USSN 09/685,771

Applicant notes that a Petition for a Two Month Extension of Time has been filed under separate cover in this case. In addition, Applicant hereby petitions for any additional extension of time which may be required to maintain the pendency of this case, and any additional required fee, except for the Issue Fee, for such additional extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2, 3, 11, and 12 are canceled without prejudice or disclaimer.

The claims are amended as follows:

1. (Amended) A substrate comprising:

pads which are provided on the surface of said substrate; [and]

surface layers which are kept to the ground potential and cover the surface of said substrate except said pads and their [peripheral]periphery, wherein said surface layers include a top main surface and a bottom main surface; and

conductive elements which electronically connect said top main surface and said bottom main surface and cover an entire side of said substrate with said top main surface and said bottom main surface.

10. (Twice Amended) A substrate comprising:

a part of circuit which is provided on the surface of said substrate; [and]

surface layers which are kept to the ground potential and cover the surface of said substrate except said part of circuit and its [peripheral]periphery, wherein said surface layers include a top main surface and a bottom main surface; and

Amendment under 37 C.F.R. § 1.111
USSN 09/685,771

conductive elements which electronically connect said top main surface and said bottom
main surface and cover an entire side of said substrate with said top main surface and said
bottom main surface.